BULLETIN

OF

THE JOHNS HOPKINS HOSPITAL.

Vol. IV.—No. 35.] BALTIMORE, NOVEMBER, 1893. [Price, 15 Cents

CONTENTS.

	PAGE.
The Examination of the Female Bladder and the Catheterization of the Ureters under Direct Inspection. By Howard A. Kelly, M. D.,	101
Medullary Form of Sarcoma of the Sternum, with Metastases in the Lymphatic Glands. By Wm. H. Welch, M. D.,	103
Maintenance of an Aseptic Technique in Gynecological Operations outside of Hospitals. By Hunter Robb, M. D.,	106
Proceedings of Societies: Hospital Medical Society,	109
Extra-uterine Pregnancy treated by Vaginal Incision [Dr. Kelly];—A Case of Uterus Duplex Solidus, with Atresia of the Vagina and Cervix [Dr. Kelly];—Exhibition of Specimens of Cystic Kidney [Dr. Flexner];—Exhibition of a Case of Skin Grafting [Dr. Bloodgood];—Removal of Foreign Body from the Eye [Dr. Theobald];—Exhibition of a Convalescent Case of Peritonitis due to Ruptured Tubal Abscess [Dr. Kelly].	
Notes on New Books,	112

THE EXAMINATION OF THE FEMALE BLADDER AND THE CATHETERIZATION OF THE URETERS UNDER DIRECT INSPECTION.

By H. A. Kelly, M. D., *Gynecologist-in-chief to the Johns Hopkins Hospital, and Professor of Gynecology and Obstetrics in the Johns Hopkins University, Baltimore.*

In remarkable contrast to the elaborate cystoscope necessary for the illumination and inspection of the interior of the male bladder, the female bladder is open to a direct inspection by very simple instruments. By the methods which I shall describe, every part of the bladder-wall, including the ureteral orifice, can be examined and treated topically without difficulty, and the ureters can be catheterized with the greatest ease. I employ for this purpose a series of sixteen dilators and an equal number of specula with obturators (Fig. 1), ranging in diameter from 5 to 20 mm. The urethra is first dilated up to 10, 12, 14, or 15 mm., the urine is drawn off, and a speculum corresponding in number to the last dilator used is inserted into the urethra and the obturator removed. The hips of the patient are then elevated until the sacrum is 20 to 30 cm. (8 to 12 inches) above the level of the table, *when the bladder becomes distended with air.*

With a head-mirror such as the laryngologists use, the examiner will be able to reflect the light from a lamp or an

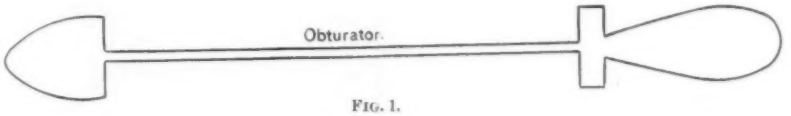

Fig. 1.

electric drop-light, or in a dark room from a candle, into the bladder and inspect its whole interior, as simply and as directly as the posterior wall of the pharynx (Fig. 2). Every part of the bladder can be seen by moving the speculum in various directions.

If the urine has not been entirely removed with the catheter, as is usually the case, the residue can readily be withdrawn through the speculum with a simple suction apparatus consisting of a rubber bulb and a long rubber tube in the end of which is fastened a hollow perforated tip. Small quantities of urine collecting from the ureters during examination can readily be taken up with small cotton balls held in long delicate forceps. The normal mucous membrane of the bladder appears as a dead-white surface, mapped out into small areas by vessels which come to the surface, branch out stellately and anastomose.

By elevating the handle of the speculum, the inter-ureteric ligament often comes into view as a faint elevation or a slightly injected area. This ligament appears to lie nearer the observer than one would anticipate.

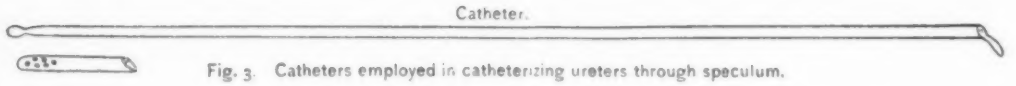

Fig. 3. Catheters employed in catheterizing ureters through speculum.

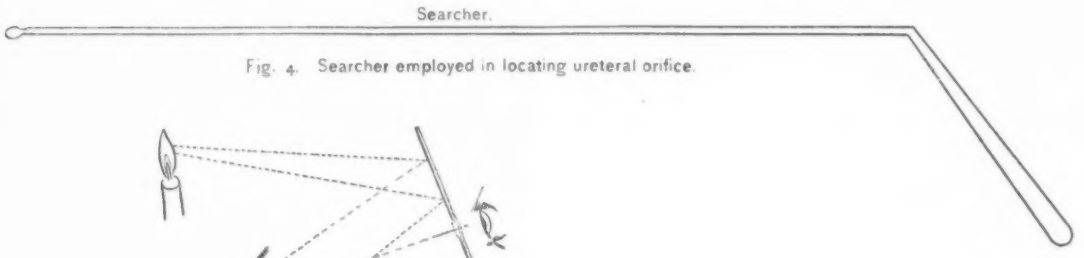

Fig. 4. Searcher employed in locating ureteral orifice.

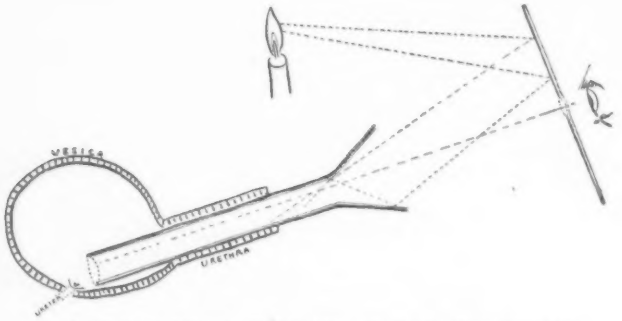

Fig. 2.—Method of illuminating bladder. Ureteral orifice exposed at end of speculum.

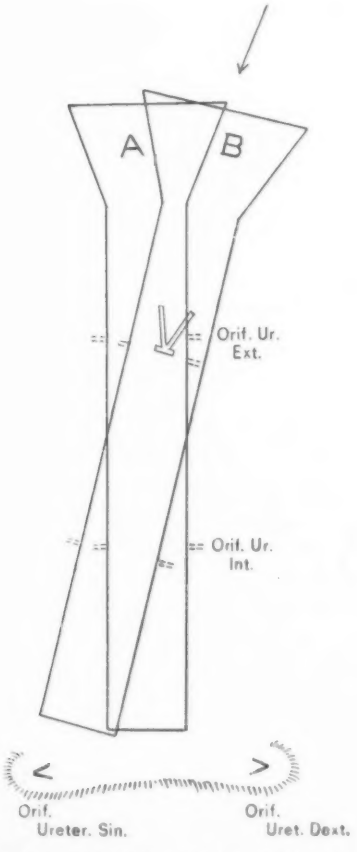

Fig. 5.—Position *A*, speculum introduced into bladder to apex of angle marked on exterior; position *B*, speculum inclined 30° to right, exposing orifice of left ureter.

The same is true of the ureteral orifices, which are readily seen by turning the speculum to one side until its axis makes an angle of 30 degrees with the median line of the body.

The orifices often appear as pits, or slits, or semilunar folds, with their convexities directed outward. Sometimes they are marked by a more rosy color than the bladder.

I have seen under reflected light small jets of urine spurt out from the ureteral orifices, and in unilateral diseases of the ureters and kidneys I have seen pus and blood flow from one opening while the other was discharging normal urine.

Catheterization of the Ureters.

Catheterization of the ureters can be as readily performed as the inspection, and consists simply in carrying a straight ureteral catheter, either without a handle (Fig. 3), or with one small enough to permit the speculum to be withdrawn over it, down into the orifice and up the ureter for several centimeters. I usually employ a searcher first, to assure myself that the opening under inspection is the ureter. This is especially necessary (Fig. 4) when there is vesical or ureteral disease, as the ureteral orifice is often more or less concealed in such cases.

An excellent mechanical method of exposing the orifice is by introducing the speculum until the apex of a $\vee$ marked on the outside 6 cm. from the end, touches the external meatus urinarius. The angle between the arms of the $\vee$ is 60 degrees. If the speculum is now elevated until the base of the bladder is brought in view, and then turned to the right or left until one of the sides of the $\vee$ is in a line with the normal axis of the urethra, thus $\lor$, the ureter will appear within the field embraced by the inner orifice of the speculum (Fig. 5). The ureteral orifices are so easily found, after a little practice, that it is not even necessary to elevate the hips and distend the bladder in order to catheterize them. It is only necessary to introduce the speculum, elevate and turn the handle to the point where the ureteral orifice should be found. By pressing the inner end down against the bladder-wall the urine is excluded, and the ureteral opening will often be found at once within the lumen of the speculum. It can always be brought into view by exercising a little patience and sliding the end of the speculum over the bladder-wall, and thus inspecting the ureteral area.

MEDULLARY FORM OF SARCOMA OF THE STERNUM, WITH METASTASES IN THE LYMPHATIC GLANDS.

BY WM. H. WELCH, M. D., *Pathologist to the Johns Hopkins Hospital.*

[*Presented at the meeting of the Johns Hopkins Hospital Medical Society, December* 4, 1893.]

I am indebted to Dr. D. F. Unger, of Mercersburg, Pa., for this specimen. I extract the following points from Dr. Unger's history of the case:

Mrs. S., aged 32 years, weight 120 pounds, mother of three children, had previously enjoyed good health. Parents are healthy. On September 2, 1892, she called my attention to a small, deep-seated, firm swelling just above the sternal notch. This gradually increased in size. On November 30, 1892, an operation was performed by a surgeon in Philadelphia, who regarded the affection as a tubercular adenitis. The operation consisted in curetting the growth above the sternum, trephining the sternum about 1½ inch from the top, curetting through this opening, passing a tube from the upper to the lower opening and washing through this canal with a solution of bichloride of mercury and peroxide of hydrogen. Following this, the suprasternal growth increased in size so as to form an irregularly elevated, somewhat nodular, firm mass about 6 cm. in diameter, adherent to the skin, and involving for a short distance the tissues over the upper anterior surface of the sternum. In the latter situation the skin ulcerated over a small area. The openings made by the operation did not close, but became filled with grayish, soft tissue. Examination of the patient on February 1, 1893, showed a swelling projecting about one-half inch at the right margin of the sternum, at the level of the first and second intercostal spaces. This swelling increased so as to touch the opening made in the middle of the sternum and to reach the margin of the suprasternal tumor. February 14 were noticed several swollen and somewhat painful lymphatic glands just above the middle of the right clavicle. After this there developed enlargement of other cervical and of axillary glands, and several nodules could be felt beneath the skin of the upper part of the thorax in front. The right arm became slightly œdematous and the veins over the right shoulder distended. Dullness on percussion, and absence of respiratory sound over the upper part of the right side of the chest were determined. General itching of the skin became a most troublesome symptom. The pulse became accelerated, respirations increased in frequency, and an irregular fever developed, the temperature running from 98° to 103° F. A note made on July 1, 1893, records increase in the number and size of enlarged lymphatic glands on both sides of neck and in the axillæ, and the presence of many nodules feeling like marbles beneath the skin of upper part of the thorax on both sides. These nodules are movable and not painful, except when they first appear. Cough became troublesome only during the last two months of life, and was attended with little expectoration. During the last two months of life the pulse ranged from 120 to 130, the respiration from 30 to 45, and the temperature from 98° to 102°. Urine diminished in amount, but was free from sugar and albumen. The patient became weaker and weaker and more emaciated, and died apparently from exhaustion on September 2, 1893, just one year from the date attention was called to the first swelling above the sternum.

The autopsy was made by Dr. Unger, from whose notes I extract the following: The anterior mediastinum is occupied by a large, firm, irregularly nodular tumor mass, so closely adherent to the sternum that it was necessary to remove most of the tumor with the sternum. The tumor consists in part of swollen and adherent lymphatic glands. It presses upon the vena cava superior, the arch of the aorta, the arteria innominata, the trachea and the base of the heart, but the caliber of these channels does not seem to be much diminished. The glands at the bifurcation of the trachea and at the root of the lungs are also the seat of new growth. The tumor on section is grayish-white, with more opaque yellowish-white areas, which in some places are softened and breaking down.

The right pleural cavity contains 4 pints of clear serum, and the left one pint of the same fluid. The right upper lobe is adherent to the costal pleura, and is closely incorporated with the tumor behind the sternum, which seems to have grown continuously into it. This lobe is consolidated throughout with diffuse and nodular masses resembling in structure the tumor and presenting areas of necrosis. The right middle lobe is filled with tumor nodules of similar appearance. The lower lobe is compressed. The left lung is adherent only at its upper part. In the anterior edge of left upper lobe is a separate tumor nodule the size of a marble. The rest of the lung appears normal. Pericardium and heart normal, likewise the spleen, liver, kidneys, abdominal lymphatic glands. Inguinal glands not enlarged.

Dr. Unger sent to me specimens from this case, removed at autopsy. I had previously, during the life of the patient, examined microscopically a small piece of tissue excised from the suprasternal tumor and found it to be a sarcoma composed of variously shaped cells, including giant cells of the type found in giant-celled sarcoma.

The specimens from the autopsy were preserved in alcohol, and consisted of the sternum with adherent tumor, of parts of the lungs containing tumor nodules, of lymphatic glands from the mediastinum, neck and axillæ, and of detached pieces of tumor. For convenience of transportation the sternum has been divided transversely through the middle piece. The ribs are severed close to the sternum.

The upper part of the sternum, consisting of the manubrium and adjacent half of the gladiolus, is covered posteriorly by a large, irregular, adherent, firm tumor mass, extending to the upper margin of the bone and laterally to the right 4 cm. beyond the margin of the sternum and to the left a little beyond the margin. Parts of this tumor mass have been cut away. The remaining part measures 8 cm. in length

from above downwards, 7 cm. laterally and 4 cm. in thickness. The free surface of the tumor is irregularly lobulated. To the right margin of the tumor is attached a piece of lung measuring 4×6×3 cm., which is completely invaded by the new growth and inseparably incorporated with the tumor behind the sternum.

There is a defect in the manubrium 2 cm. below the top near the median line. This defect, 1 cm. in diameter, is surrounded by bone to the left, and is continuous to the right, with an outgrowth of the tumor through the bone. It corresponds to the opening made during life by the trephine. On the anterior surface of the manubrium are two detached, firm tumor nodules, the larger measuring 2 cm. in length and 8 mm. in breadth.

In order to determine the relation of the tumor to the sternum the bone was sawed through in the median line and the tumor partly cut through in the same plane. This section shows that the manubrium throughout nearly its whole extent is invaded by the new growth, which has caused perhaps some general enlargement of the bone, but has not materially altered the normal size and shape, so that from external examination the extent of involvement of the bone would not be suspected. The manubrium measures 5.3 cm. in length, 5 cm. in width, and 2.5 cm. in thickness at the level of the clavicular articulations.

Throughout an area of considerable extent the osseous substance is entirely replaced by a grayish-white or yellowish-white tissue of medium consistence, in places rather soft. This area begins on the posterior surface just below the center of the manubrium and extends downwards for 2 cm. Its vertical length on the anterior surface of the bone measures 1.5 cm. It occupies over this extent the entire thickness of the right half of the manubrium, and in the left half occupies the posterior part of the bone, leaving bone substance only in front and on the left margin. The hole made with the trephine, now filled with the new growth, corresponds to the central part of this area in which no bone substance is present.

Above and below this area of complete destruction of bone the spongy texture of bone can be made out, at first very much rarefied, and gradually becoming near the upper and lower ends of the manubrium more nearly normal in arrangement. The soft part of the tumor replacing bone merges gradually into the part where plates of bone are present. Throughout the manubrium the marrow spaces, much dilated near the soft area, are filled with grayish-white tissue of the same general appearance as that in the tumor. This filling up of the medullary spaces with new growth renders the cancellous tissue of the manubrium markedly different in aspect from the normal appearance in the adjacent middle piece of the sternum. The whole manubrium on section has a nearly uniform, solid, grayish-white appearance, in which the bony plates can be more readily appreciated by the touch than by the eye. The cartilage between the first and second pieces of the sternum and the remainder of the sternum are normal.

The tumor on the posterior surface of the sternum is directly continuous with that part of the new growth in the manubrium which occupies the area in which the bone is entirely gone. At the upper and lower margins of this area the periosteum on the the posterior surface of the manubrium can be traced as a grayish fibrous band outwards over and into the post-sternal tumor for a distance of 2 to 3 cm., giving the impression of a growth from the interior of the bone pushing the periosteum out and then breaking through it. Above and below this apparent outgrowth of the tumor from the bone the tumor has developed to the extent already indicated, and has come into contact with the periosteum, from which, however, it can be separated without difficulty.

To the right of the sternum the tumor has grown laterally and forwards so as to form a projecting mass 4 cm. in width, filling the first intercostal and part of the second intercostal spaces. This is the swelling which was recognized during life at the upper part of the right margin of the sternum.

Upon section the prevailing aspect of the tumor is firm and grayish-white, with some denser grayish fibrous bands running through it. In many places can be seen more opaque yellowish-white areas of coagulation necrosis. These areas are irregular in size and shape, some being 5 or 6 mm. in diameter. In three places these areas are softened and broken down so as to form little cavities with friable, necrotic contents and irregular walls.

The consolidated upper lobe of the right lung presents in general a similar appearance, diffuse growth and circumscribed, often coalescing nodules of grayish-white firm tissue, in places necrotic. The swollen lymphatic glands, some as large as a pullet's egg, and the separate tumor nodules over the sternum are likewise of a nearly uniform grayish-white color, with areas of firm coagulation-necrosis, and in a few places with areas of broken-down necrotic tissue. The pigmented bronchial lymphatic glands are similarly affected. In places the new growth has extended through the capsules of the lymphatic glands and involved the surrounding tissues.

The microscopical examination reveals essentially the same structures in the main tumor in and attached to the sternum and in the metastases. The grayish-white, fresher parts of the growth are composed of cells and scanty stroma. The cells are of various shapes, small round cells with deeply staining single nuclei, larger cells of an epithelioid habitus, fusiform cells, giant cells, and cells with deeply staining, large, irregular budding nuclei, such as occur normally in the marrow of the bones. In places one or the other of these various forms of cells may predominate, but in general they are mixed together. The stroma is in places scanty, the tissue being composed mostly of cells; in other places it is more abundant, and it may form dense bands of sclerotic fibrous tissue with few cells. There is no regularity in the arrangement of the cells, especially no suggestion of an alveolar arrangement. The giant cells are present both in the sternal tumor and in the metastases. They are not abundant, but are seen here and there in all of the sections. They are large protoplasmic bodies with large multiple nuclei, usually clumped in the central part of the cell. None are seen with a mural arrangement of the nuclei or suggestive of tubercle giant cells. Allied to these giant cells are large round and oval cells with deeply staining, often very irregular, large nuclei, some ring-like, some like the letter S, and many

budding (*cellules à noyau bourgeonnant*). These cells are abundantly present. Transitional forms suggest the development of the giant cells from the cells with budding nuclei. In the more opaque yellowish areas the appearance is that of typical coagulation-necrosis, absence of nuclei or presence of fragments of nuclei. These areas are usually dense and somewhat fibrous in appearance, but, as already mentioned, some are disintegrated into a structureless detritus. The margins of the necrotic areas show the same structure as in the rest of the tumor, or may be more fibrous in texture. In no places are seen tubercles or appearances indicating tuberculosis. Staining for tubercle bacilli and for other bacteria fails to show any bacteria.

The appearances described establish the diagnosis of sarcoma. The possibility that the growths are syphilitic was considered. The areas of coagulation-necrosis are not unlike those which occur in gumma, but the structure of the surrounding parts and other clinical and anatomical characters cannot well be reconciled with the diagnosis of syphilis. Areas of coagulation-necrosis of the character present in this specimen are not uncommon in some kinds of sarcoma.

The sarcoma is of the mixed-celled type with cell elements belonging to the marrow of the bones. Giant cells of this type and large cells with large, irregular, budding nuclei occur more frequently in sarcoma of bone than in any other kind of sarcoma. The relation of the tumor to the manubrium sterni cannot well be explained otherwise than upon the supposition that the tumor originated in this bone, a view confirmed by the histological structure. The most natural interpretation is that the tumor sprang from the marrow of the bone, but tumors of similar structure may spring from the periosteum. The relation of the periosteum to the tumor as already described cannot be considered conclusive proof of the central origin of the tumor, as a similar anatomical arrangement may occur with primary tumors of the periosteum and secondary invasion of the bone. While therefore I am inclined to the view that the growth originated in the medullary part of the bone, I do not think that the possibility of a periosteal origin can be positively excluded.

There are several points of especial interest which suggest themselves in connection with this case.

It is interesting that there has been no new production of bone coincident with the extensive destruction of bone. This type of sarcoma in the long bones is likely to contain newly formed bone, but it does not always, and when originating in the short bones it is less likely to do so.

The main tumor topographically belongs to the group of tumors of the anterior mediastinum, and the present case is one of unusual origin of such tumors.

The extensive secondary involvement of lymphatic glands in this case is an unusual feature of sarcoma. This involvement was limited to the glands within the thorax and in the neck and axillae. At one time during life Hodgkin's disease was suspected. The numerous discrete nodules over the sternum and thorax occurred in situations where there are no pre-existing lymphatic glands. These metastases were probably of lymphatic origin and invaded the fasciæ and muscles, which were replaced by the new growth.

Giant-celled sarcoma is ranked as a comparatively benign type of sarcoma, and is not likely to metastasize. The present tumor cannot be considered as a typical giant-celled sarcoma, like the ordinary epulis. The giant cells were less numerous and the rest of the tumor was richer in cells, especially in small round cells, than an ordinary epulis. It is, however, a somewhat arbitrary matter as to what proportion of giant cells is necessary to establish the diagnosis of giant-celled sarcoma. In the present case the giant cells were of the regular medullary type, and although not very abundant, they were present in fair number both in the primary growth and in the metastases. More numerous were the large marrow cells with budding nuclei, which appear to merge into the giant cells. The histological evidence of malignancy, however, was expressed in this case by the abundance of such cells as are found in common forms of rapidly developing mixed-celled sarcoma.

The occurrence of necrotic areas and the occasional disintegration of these areas are not so rare in sarcoma, especially sarcoma of bones, as to need especial emphasis.

Several cases of primary sarcoma of the sternum have been recorded, and nearly the whole sternum has been successfully excised for this disease, but this bone is not a common seat of primary sarcoma.

JOURNALS, ETC., ISSUED BY THE JOHNS HOPKINS PRESS OF BALTIMORE.

American Journal of Mathematics. S. NEWCOMB, Editor, and T. CRAIG, Associate Editor. Quarterly. 4to. Vol. XVI in progress. $5 per vol.

American Chemical Journal. I. REMSEN, Editor. 8 Nos. yearly. 8vo. Vol. XVI in progress. $4 per vol.

American Journal of Philology. B. L. GILDERSLEEVE, Editor. Quarterly. 8vo. Vol. XV in progress. $3 per vol.

Studies from the Biological Laboratory. H. N. MARTIN, Editor, and W. K. BROOKS, Associate Editor. 8vo. Vol. V in progress. $5 per vol.

Studies in History and Politics. H. B. ADAMS, Editor. Monthly. 8vo. Vol. XII in progress. $3 per vol.

Johns Hopkins University Circulars. 4to. Monthly. Vol. XII in progress. $1 per year.

Johns Hopkins Hospital Bulletin. 4to. Monthly. Vol. IV in progress. $1 per year.

Johns Hopkins Hospital Reports. 4to. Vol. III in progress. $5 per vol.

Contributions to Assyriology, etc. Vol. II in progress.

Annual Report of the Johns Hopkins University. Presented by the President to the Board of Trustees.

Annual Register of the Johns Hopkins University. Giving the list of officers and students, and stating the regulations, etc.

MAINTENANCE OF AN ASEPTIC TECHNIQUE IN GYNECOLOGICAL OPERATIONS OUTSIDE OF HOSPITALS.

By Hunter Robb, M. D., *Associate in Gynecology.*

[*Read before the Medico-Chirurgical Faculty of Maryland at Annapolis, November* 22, 1893.]

It is not necessary for me to-day to make any general remarks about, or put forward any arguments in favor of, the employment of a thorough aseptic technique in surgical operations. I feel sure that every member here present is anxious to discover himself, or to learn from others, and to carry out any measure which promises the speedy healing of the wounds which he makes, and obviates as far as possible the dangers of infection. I have more than once encountered an erroneous opinion which is not confined to members of hospital staffs, but is to a large extent shared by the public outside. I mean the idea that the great majority of serious operations cannot in these days be safely performed outside a hospital. When, however, we consider the class of private patients to whose homes we are called—homes supplied with every modern convenience—we must allow that, although we can only expect an ideal operating room in a hospital, we have some advantages which are not at our disposal in treating patients in the crowded wards of a general hospital. Again, we are dealing with a class of patients whose circumstances have been such that the system is much better prepared to afford a more stubborn resistance to pathogenic organisms, should they gain entrance, than we find among the members of the poorer classes, who have been suffering for years from the want of sufficient food and [illegible]ic surroundings. Lastly, when we consider the successful operations which have been performed in private houses, we cannot but conclude that the statistics, if we exclude the better class of patients treated in the private wards, will compare very favorably with those which are furnished by the majority of our best hospitals.

I propose, therefore, to speak briefly of operations in private houses, in which the rigid technique observed in hospitals must necessarily be more or less modified, and to try to show that in scarcely any case will any essential principle of asepsis need to be sacrificed.

A surgeon who has mastered the principles underlying an aseptic technique will be called upon, while adapting himself to his surroundings, to utilize this knowledge to the full. Even if he is obliged to operate upon the shortest notice, he need never be taken by surprise; and even if the conditions are the most primitive, as long as he has fire, water, clean vessels, and common washing soda, he is in a position to carry out an aseptic technique.

We will suppose, however, a case in which the surgeon has had several days' notice, and thus has had ample time to prepare both himself and patient. Let us suppose the operation to be one of abdominal section. In ordinary cases the patient should be under observation for several days, and should be ordered to take a daily bath for one or two days prior to the operation. She should spend some part of each day in bed, in order to accustom herself to the recumbent posture which she will have to occupy later, and should also receive daily a vaginal douche of a warm 1 to 3 per cent. aqueous solution of carbolic acid. The bowels should be opened daily by gentle laxatives. Twelve to twenty-four hours before the operation, a good purge is given, and before the patient comes upon the table the rectum should be thoroughly emptied by a large enema of soap and water. Light nourishing food should be taken, but unless the patient be very weak, nothing should be given by mouth for eight hours previous to the time of operation.

The preparation or sterilization of the field of operation is divided into two parts, the first consisting of measures employed some time before the operation, the second of those which are necessary after the patient comes upon the table.

The former may be summarized as follows:

1. Bath of soap and water and a vaginal douche of a 1 per cent. aqueous solution of carbolic acid given daily for three days before the operation.

2. Shaving the hair of the abdomen and pubes on the night preceding the day of the operation.

3. Thorough scrubbing of the parts with (*a*) soap and water, (*b*) alcohol and ether, (*c*) bichloride of mercury (1 : 500).

4. Poultice of green soap applied from 1 to 3 hours, according to the sensitiveness of the skin.

5. Removal of the soap by scrubbing with brush and hot water.

6. Application of a compress of bichloride (1 : 1000), to be kept on until the patient is brought to the operating table.

We must presuppose that the surgeon has provided himself with a stock of instruments and with a supply of dressings and suture materials which have been sterilized and can be used at the shortest notice. I do not mean by this that a large armamentarium is necessary, for the well-trained hand can effect great things with but few instruments.

If in order to economize room only one kind of suture material can be taken, it will be best to choose silk, not only because it can be made to serve almost every purpose, but also because if it becomes contaminated it can easily be resterilized by being boiled in the 1 per cent. soda solution.

The operating room should be chosen with especial regard to two requirements, viz: (1) that it is well lighted, and (2) that it can be easily cleansed. It can be chosen a day or two before the operation, and it should at once be cleared of all the ordinary furniture, carpet and rugs. The floor, and if possible the walls and ceiling, should be thoroughly scrubbed with soap and water. All hangings are to be removed from the windows and doors, and especial attention is to be given to the cleansing of the window-sills, of all corners and crevices, and of the wood-work generally.

For the operating table, an ordinary plain narrow kitchen table will answer every purpose. For the patient's feet to rest upon, a plain wooden chair can be placed at the end of

the table at such an angle that the back of the chair will be caught under the lower edge of the table.

It will be necessary to have two other tables about the same size as the first, on which the vessels which are to contain the instruments, ligatures, sponges and other necessaries may be placed. When special tables for this latter purpose cannot be obtained, any two small, narrow tables may be used, provided that after they have been thoroughly scrubbed with soap and water and bichloride solution, they are covered with sterile gauze. Six plain wooden chairs should also be ready. The table and chairs should be thoroughly scrubbed with soap and water, and with a 1 : 500 aqueous solution of bichloride of mercury.

Arrangements should be made for an abundant supply of hot and cold water, some of which, after being boiled, should be kept ready for use in sterile vessels. Especial care must be taken about the cleansing of the large tin boilers in which the water is to be boiled, as well as the other vessels in which it is to be stored afterwards. They should be thoroughly scrubbed out with sand-soap and water and then well rinsed out with hot water. The vessels in the operating room should be provided with lids, which should be covered with sterilized towels, or some other clean material, in order to avoid the slightest risk of contamination from the dust of the room. These vessels are to be replenished from the boilers on the stove, and the duty of conveying the water from the boilers to the operating room should be delegated, if possible, to an assistant, or at least to a reliable person who is not likely through ignorance to be guilty of putting his hands into the pitcher, or of allowing the water to become contaminated in some other way.

Some hours previous to the operation, a good supply of water should be heated and transferred to the sterile vessels in the operating room, where it may have time to become cool.

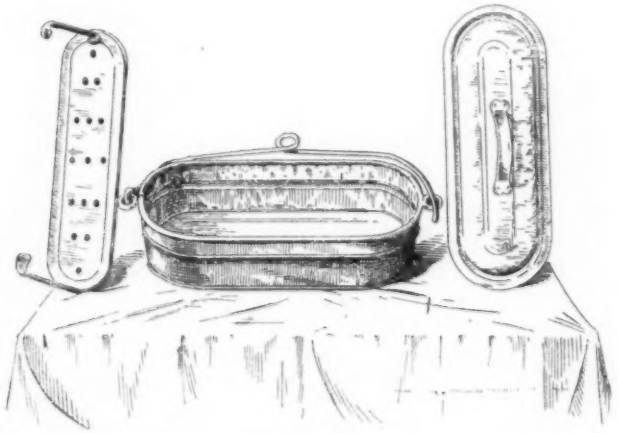

FIG. 1.

Before going to an operation, the surgeon should be careful to consult his instrument list and make sure that nothing which will be required is left out, since, when away from home, it will not be possible to make a requisition upon the stock instrument case for any article which has been forgotten.

For many reasons it is better to make the final sterilization of the instruments and dressings at the place where the operation is to be performed. It will therefore be advisable to take along the small soda solution apparatus, which is really nothing more than an ordinary fish-kettle (*vid.* Fig. 1) and the Arnold steam sterilizer.

The instruments can be conveniently carried arranged in compartments in a long sheet of canton flannel (*vid.* Fig. 2), which is then rolled up and tied around the middle with a broad tape. Several hard rubber trays for the instruments will be found very convenient, and if these are made so that they fit into one another they will not occupy too much room.

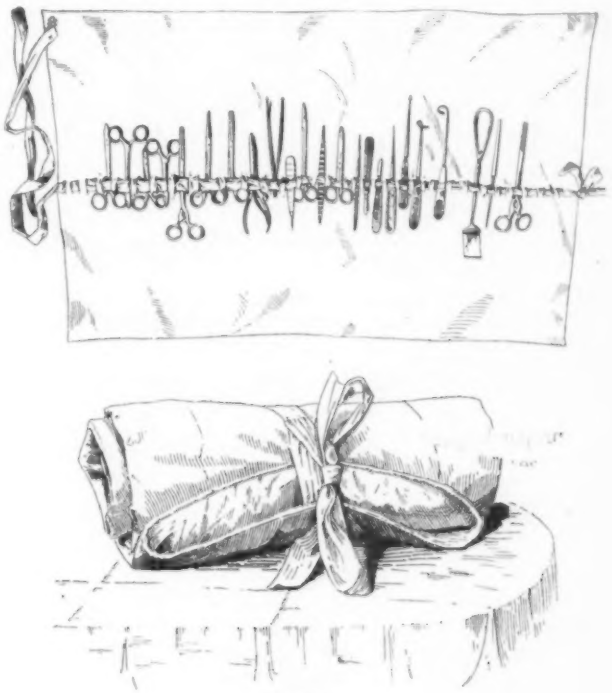

FIG. 2.

Good soap in tin cases, and air-tight screw-cap bottles containing potassium permanganate and oxalic acid, and a supply of green and oleine soap must not be forgotten.

Sterilized gauze, cotton, sponges and bandages are rolled up in sterilized towels, and the ligatures are carried in the large ignition tubes, which are plugged with cotton stoppers and which have been sterilized in the usual manner. A bottle of bichloride or iodoformized celloidin and any antiseptic powders which will be required, as well as some sterile physiological salt solution,* and operating suits, a liberal supply of towels, rubber gloves and mackintoshes should be included in the outfit.

It is well to collect everything before commencing to pack

* Perhaps I ought to say that physiological salt solution, before being used in hospitals, is generally subjected to fractional sterilization. But though this is to be preferred, a safe substitute may be provided by dissolving tablets of chemically pure chloride of sodium in water and afterwards boiling for some time.

the valise, so that each item on the list may be checked off as the article is packed.

The "telescope" valise will be found most serviceable and convenient. It is also inexpensive, and admits of being easily cleansed, and things packed in it can be transported safely.

It will be necessary for the surgeon to have with him at least one assistant who is thoroughly conversant with the technique which he wishes to carry out.

The strictest orders must be given to any volunteers that they refrain from touching any objects or rendering any assistance without being especially requested to do so.

The assistant should be sent forward some hours previously to see that everything is in order. On arriving, he will see that an abundance of water is put on the stove to boil in clean vessels, and that the dressings and a supply of towels are being sterilized in the Arnold steam sterilizer, and also that the furniture in the operating room has received the proper cleaning.

Before touching anything which has once been rendered surgically clean, the assistant must put on his operating suit and thoroughly scrub his own hands; but if he make use of a sterilized pair of rubber gloves, he can put off the final cleansing of his hands till just before the operation.

The operating table, after being sterilized, is to be prepared in the following way: A folded blanket, or better still, a felt pad large enough to cover it, is placed upon the table. Over this is spread a rubber sheet, which in turn is covered with a fresh, white sheet. A small pillow for the head of the patient to rest upon and the rubber ovariotomy pad are placed in position.

After this has been done, the various basins which will be required are conveniently arranged on the side tables, filled with water or sterilized salt solution, or with the various other solutions which may be preferred. The sutures are shaken out of the ignition tube into the vessel prepared for them.

The instruments, after being boiled for five minutes in a 1 per cent. solution of carbonate of soda (common washing soda), are turned out into the sterilized trays, which contain sufficient warm sterilized water to cover them. Instead of the simple water, cold, previously boiled, 1 per cent. soda solution, or a solution which contains 1 per cent. of soda and 1 per cent. of carbolic acid, may be employed. The trays should have been previously scrubbed thoroughly with soap and water and afterwards rinsed off with boiling water.

When everything is prepared, the final disinfection of the hands and forearms of the operator and his assistants begins. They are scrubbed vigorously for ten minutes by the watch, with a stiff, sterilized brush and with green soap, the water being used as hot as it can be borne, and changed several times. The excess of soap is washed off in hot water, and the hands and forearms are then immersed for two minutes in a warm saturated solution of permanganate of potassium, which should be well rubbed into the skin with the aid of a sterilized swab. They are next immersed in a warm saturated solution of oxalic acid, until the stain of the permanganate has completely disappeared, being afterwards rinsed off in sterilized water or sterilized salt solution, and finally immersed for two minutes in a 1:500 bichloride solution. Just before beginning the operation the hands and forearms should be again well rinsed in sterilized salt solution, to remove the excess of bichloride.

The use of sterilized rubber gloves to protect the hands will often prove of the greatest convenience, for with their aid we can, without much fear of contamination, often perform the needful manipulations about the patient before the operation begins.

After the patient has been anæsthetized and placed upon the table, the compress is removed and the following steps are carried out:

1. The field of operation is scrubbed with soap and warm sterile water.
2. Sponged with alcohol and ether.
3. In some cases with a solution of permanganate of potassium and oxalic acid, as in the disinfection of the hands, with subsequent irrigation with warm sterile water or salt solution.
4. Irrigated with 1 liter of a solution of bichloride of mercury (1:500).
5. Irrigated with sterilized salt solution to remove any excess of sublimate.

The abdominal wall having thus been rendered as nearly sterile as possible, is protected with sterilized gauze and towels, and the field of operation itself is covered with a piece of sterilized gauze which has had an opening made in it down the middle, so that when the edges are pulled apart the line of the abdominal incision will be exposed.

Fig. 3.

Of the operation itself, and the method of dressing the wound, we need not speak. In this connection, however, we would say, that wherever numerous stitches are required, the use of "carriers" (*vide* Fig. 3), with which you are all probably familiar, will bring about a great saving of time and trouble.

If irrigation of the abdominal cavity is required, a pitcher which has been rendered surgically clean should be ready (*vide* Fig. 4).

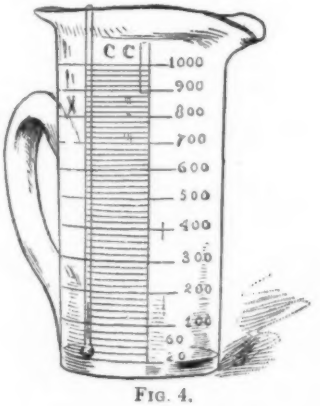

Fig. 4.

If an ordinary pitcher is used, a sterilized thermometer is necessary in order to test the temperature of the water, as it will not be safe to trust to the impression given to the hand from the outside, and it will of course not be allowable to place the fingers into the water.

Immediately after the operation has been finished and the dressings have been applied, the patient, not yet recovered from the anæsthetic, is removed to the bed where she is to remain during convalescence. The physician should not leave the house until all immediate danger from the operation is past.

The after-care of cases should be very much the same as of those in hospitals.

If the operator lives too far away to make it possible for him to see the patient every day, he must of necessity entrust her to the care of a brother physician, but before going away, he must not omit to leave full instructions regarding diet, catheterization, the administration of enemata, and the indications for changing the dressing, and in fact providing as far as possible against any emergency which may arise.

It will be well for the operator to do the first dressing himself, and we would insist that in this case the same rigid precautions with respect to the sterilization of the hands and forearms, which were employed at the time of the operation, should be observed.

It requires a considerable length of time to arrange all those details which have been described, and I have purposely omitted to mention all the possible refinements in technique which may ultimately be introduced. If, however, we hope to do an aseptic operation, even what we might be tempted to call the most trivial detail must not be neglected, for in a surgeon's technique the adage is especially true, that "a chain is no stronger than its weakest link."

Where, from the grave condition of the patient, it is necessary to operate immediately, of course it will be impossible to carry out all these details, but at any rate we should, starting with strict principles, swerve from them no more than we are obliged to. Above all, we must not allow ourselves to form careless habits, which cannot fail in the end to lead to bad results.

A detailed description of all the possible chances of error, and of the many precautions which must be taken to meet them, would require the writing of a whole volume. In this short address I have attempted merely to give an outline of the general course to be pursued, leaving it to the good sense of the surgeon himself to decide upon the precise steps to be taken when other emergencies arise.

PROCEEDINGS OF SOCIETIES.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Meeting of October 23, 1893.

DR. KELLY in the Chair.

Extra-Uterine Pregnancy Treated by Vaginal Incision.—DR. KELLY.

I wish briefly to call your attention to this patient before she leaves the hospital, on account of the method of treatment employed in relieving her. She was sent to me by physicians with the statement that she had been a sufferer for some time, but they had not clearly defined the nature of her disease. On examination it proved to be an extra-uterine pregnancy. Upon opening the abdomen by a small incision in the median line, I found beneath coils of densely adherent intestines a dense mass in the pelvis. The patient was weak, the pulse feeble and her general condition critical. Enucleation of the mass would have been exceedingly dangerous, as it was situated posterior to the uterus, and the adhesions were too extensive above it. The question was, should I simply abandon the case or try other measures for her relief. I decided to follow the treatment which I had adopted successfully in two preceding cases, that of opening the sac freely through the vagina. Proceeding according to this method, I introduced my finger into the vagina, and, assisted by the free hand above in the abdomen, I was able to palpate the gestation sac and obtain a definite idea of its size and anatomical relations. I then pushed the posterior vaginal wall up until it came in contact with the sac wall, and thrust a pair of sharp-pointed scissors into the sac, guided by the vaginal finger, and withdrew them partially open. This was followed by larger scissors, which were also withdrawn in a similar manner. In this way I made an opening about an inch in diameter, and through it evacuated the embryonic debris. I then washed out the sac by means of a curved glass douche-nozzle. This douche was repeated daily in the ward until the discharge ceased. The sac rapidly closed from above down to the vagina, and the patient made a most satisfactory recovery without any untoward symptom. In cases of this class where enucleation is extremely dangerous on account of adhesions, I think this method of treatment advisable.

A Case of Uterus Duplex Solidus, with Atresia of the Vagina and Cervix.—DR. KELLY.

Cases of malformation of female sexual organs of major degree are quite rare. I present a specimen of what may be called two uteri, removed from a woman 30 years of age. Since puberty she has suffered periodical pains, headache, flushes and other menstrual molimena, and has occasionally had vicarious hemorrhage, usually from the rectal mucous membrane. She was a constant sufferer from pain in the lower part of the abdomen. The external genitals were normal, but the vaginal outlet was represented by only a shallow pit not more than half an inch deep behind the hymen. The first impression conveyed by a study of the case was that she had well-developed internal and external genital organs with an intervening atresia vaginæ. With this impression in mind she was examined under anæsthesia some years ago by physicians who decided that there was complete absence of the internal sexual organs. I examined her under anæsthesia soon after her admission to this hospital, and found that the ovaries were present, and possibly other parts of the sexual organs in an undeveloped state. I operated with the patient in the Trendelenberg position, and on opening the abdomen I found two little nodules representing the uterus, one in the median line and one about two inches to the left. Attached on either side were well-developed tubes and small ovaries. A fibrous band of tissue connected the two uteri. The operation consisted in the extirpation of the uteri and their appendages above this band. The patient made a satisfactory recovery, was at once relieved of her symptoms, and has passed a menstrual period since without any of her customary pains. So far as one can judge from the results following ovariotomy in general, she will have no further trouble.

The relation of this case to other malformations of the female sexual organs is very interesting, and I will briefly describe what I consider the most satisfactory classification of the various embryological deviations of these organs. For this purpose we must go back in embryology to a period just antedating the eighth week of fœtal life.

One class consists of the malformations which result from the failure of the two Mullerian tubes to coalesce. The cyst walls

become more or less united, but the tubes still remain distinct and have no connection with each other, appearing as entirely separate vaginæ, uteri and Fallopian tubes. Another group, more common than the first, is that in which one Mullerian duct is more or less atrophied while the other is developed. The third class consists of those abnormalities in which both tubes are atrophied, leaving no communication between the nodules and the exterior. This is the *uterus duplex cum atresia cervicis et vaginæ*, represented by the specimen which I exhibit this evening. There is still another class where the uterus and vagina are perfect, with atresia of the cervix or the hymen, or more rarely the vagina. Another case in the gynecological wards at the present time represents this class. This classification will include all of the deviations in the development of the female genital organs.

Exhibition of Specimens of Cystic Kidney.—Dr. Flexner.

The specimens which I desire to present to you to-night were derived from a man 49 years old, admitted into Dr. Osler's wards, who died in the hospital on the 14th of October. The diagnosis of emphysema and heart hypertrophy with broken compensation had been made during life, and the autopsy confirmed the diagnosis. However, the hypertrophy of the left side of the heart was greater than could be accounted for by the condition of the right side and the lungs.

The condition of the kidneys, which these specimens present to your attention, was unsuspected during life. There were no symptoms referable to the tumor; and the urine was clear, amber-colored, and contained a trace of albumen and a few granular casts. The specific gravity was 1016. You observe that both kidneys are much enlarged, the average size being $21 \times 11 \times 7$ cm. The cysts to which the increased size is due are various in size. The largest attains the size of a small orange, while many no larger than a pea are present, and still smaller ones are not wanting. With reference to their distribution, they are found in the cortical and pyramidal portions of the organ and in the columns of Bertini. The contents of cysts vary. The larger ones contain a dark fluid substance in which much granular detritus floats, or their contents are quite thick and granular, while some of the larger cysts and many of the smaller ones contain a pale yellowish, slightly turbid or quite clear fluid. Examined microscopically the cyst contents vary with their gross appearances. The cysts with dark contents contain, besides granular dark-yellow or brown pigment, many fatty epithelial cells, compound granular corpuscles and red blood corpuscles, many of the latter being quite decolorized and appearing as shadows. The cysts with clear contents show only a few epithelial cells and little granular material.

This cystic condition of the kidneys is found at times at birth, and the increased size of the organs may offer a decided obstacle to the delivery of the child; so that there are cases recorded, as, for example, by Orth, where the head of the child has been pulled off in the vain endeavor to deliver the fœtus. In other instances the impediment offered by them to the action of the diaphragm has caused the death of the child soon after birth. This condition has been found in children who have died from other causes at the age of 10 or thereabouts, in whom there was no suspicion of kidney disease. In adults, also, the condition is usually unsuspected during life, and it is not until the autopsy that it is discovered. The affected individuals seem to go through life and often attain a mature age apparently without being worse off for having such extensively diseased kidneys. The urine gives no indication of the condition.

With reference to the etiology of this affection, Virchow attributed those cases occurring in the newly-born to an inflammatory process taking place during intra-uterine life, in which the papillary orifices of the pyramids were obliterated. Leichtenstern maintained the inflammatory origin for a portion at least of the cases in adults. He regarded the inflammation as extending from the pelvis into the papillæ, causing the obliteration of the latter, and denominated the condition as pyelo-papillitis fibrosa. This explanation cannot, however, account for all cases. Neither can the suggestion of Rindfleisch, that there is a congenital atresia of the renal artery, explain the cases in the newly-born. The idea of Koster, based on the conception of Kuppfer, which sought to account for these cases by supposing that in the development of the kidney the two sets of tubules, secreting and collecting, which were believed by Kuppfer to originate separately, failed to unite, must, in the light of more definite knowledge of the development of the kidney, be abandoned. The view of Bland Sutton which endeavors to account for them on the grounds of included portions of the mesonephron, thus bringing them into the class of teratomata, is to be mentioned. And, finally, the recent studies of Neuwerck and Hufschmid and von Kahlden, which indicate their adeno-cystomatous nature.

We intend to reserve the complete description of this case for a future publication, in which the study of other cases will be reported. But from the study which has thus far been made we can confirm the work of the last-mentioned authors. There are papilliferous projections covered by epithelium into the cavity of the cysts, and epithelial ingrowths into the cyst wall.

The hypertrophy of the left heart we would also in part explain by the condition of the kidneys.

Dr. Kelly.—This is interesting from a surgical standpoint. I remember being invited to an ovariotomy in Philadelphia, but after the abdomen was opened, instead of an ovarian cyst, a large cystic kidney was found and removed, which was probably four times as large as the specimen exhibited by Dr. Flexner. The other kidney was then examined and found to be in the same condition. The first would not have been removed had the condition of the second been recognized.

Exhibition of a Case of Skin Grafting.—Dr. Bloodgood.

The patient, a man of 45 years, was admitted to the hospital three years ago with extensive ulcers above the malleoli of the left leg. The area over the external malleolus healed without grafting; that over the inner malleolus was grafted. The interesting point we wish to demonstrate is—the condition of the grafted area, as compared to the area which healed without grafting. The skin of the former is soft, smooth, movable on the deeper tissue, of almost natural color, and shows no tendency to ulcerate; that over the latter is hard, rough, firmly adherent to the deeper parts, and vascular. The epidermis is so thin that the slightest trauma destroys it, leaving an ulcerative area.

The method we employ is as follows: The ulcer is dissected out with a narrow skin margin; the fibrous base is scarified. Large thin grafts are taken from the skin of the thigh and carefully spread over the scarified tissue, all bleeding having been checked by pressure. The grafts slightly overlap the skin margins and each other. Both ulcer and thigh are carefully cleaned and prepared for operation, the thigh the day before operation, the ulcer for some days.

During the operation salt solution only is used. The grafted area is dressed with protective and gauze; the limb placed at rest. The first dressing is made generally on the tenth day.

Our results are generally very satisfactory, and this case demonstrates the ultimate result.

Dr. Theobald.—I made similar grafts by Thiersch's method about two and one-half years ago, upon the upper eyelid and brow of a man who was badly burned about the face by vitriol. Perhaps two weeks after the burn I made upon several occasions small grafts of skin. All except one united. The result was what I hoped for, the prevention of marked ectropion. Without the grafting he would have had complete ectropion, which would have necessitated a large subsequent operation to correct it. Probably as many as 12 or 15 grafts were taken from the arm.

Meeting of November 6, 1893.

DR. KELLY in the Chair.

Removal of Foreign Body from the Eye.—DR. THEOBALD.

The instructiveness of the case which I wish to report consists in this feature, my utter inability to remove the foreign body upon the patient's first visit to my office, and the absolute ease with which it was removed three days later. The foreign body, which had been in the eye for several days, was the tiny tip of a thorn of a chestnut burr. It was imbedded in the cornea, entirely underneath the epithelium, and was lying more or less obliquely between the corneal layers. So far as I can recall, I have never before had a case of a foreign body imbedded in the cornea which I did not succeed in removing at the patient's first visit. In this instance I worked over it for an hour under cocaine. The patient suffered no pain and behaved admirably, but still I failed to get it out. There were two difficulties which made the attempt a failure. In the first place it was almost impossible to see the foreign body; it could not be seen by ordinary daylight or artificial light, but only when light was concentrated upon it by a convex lens, and then only in certain positions. The other difficulty was that the corneal tissue was so extremely tough. I used a cataract needle and then a needle-knife, cutting into the corneal tissue, and then employed a fine pair of forceps, but all to no purpose.

It very often happens when we remove a scale of iron or a fragment of emery from the cornea, that we leave behind a layer of stained corneal tissue, impregnated by some of the substance of the foreign body. This colored area, which looks like a part of the foreign body, and which prevents the restoration of the corneal epithelium, it is almost impossible to remove at once, but if one waits a day or two, a diminutive slough occurs about it and it is taken out without any trouble. Having this fact in mind, I told my patient to come back in two days, and I gave him something to lessen the irritation. He came back on the third day. The foreign body had then worked itself towards the surface of the cornea and projected slightly. It was perfectly easy to see it, and the very first attempt I made to remove it was successful. The lesson which this case teaches is, that we should not be too persistent in trying to remove, at once, a troublesome foreign body from the cornea, when, by waiting a day or two, we may be able to extract it with comparative ease. Perhaps the persistent efforts made at the first visit to remove this body caused some necrosis of tissue about it, and thus facilitated its ultimate extraction.

In this connection I have also to show a small foreign body which I removed several years ago without any trouble. It is the tip of the thorn of a rose. It had transfixed the cornea and penetrated the anterior chamber. It was readily seen and was extracted easily by forceps. The aqueous humor gushed out, but afterwards the chamber refilled. The eye regained its normal condition, except that a slight opacity of the cornea remained to mark the site of the injury.

A word or two in regard to methods of removing foreign bodies from the cornea. Since the introduction of cocaine the operation has been greatly facilitated. Two or three instillations of a 4 per cent. solution, during a period of 5 to 7 minutes, produces absolute anæsthesia of the cornea, and one can work at it with perfect ease to himself and without pain to the patient. Cocaine has two other effects. It loosens and softens the epithelium of the cornea, and if the foreign body be not deeply imbedded it will come out the more readily because of this action of the cocaine. It hardens, however, the true corneal tissue, and if the foreign body has passed deeply into the cornea (as in the case related) this effect of the cocaine increases the difficulty of removal. This hardening of the corneal tissue we notice in our iridectomies and cataract operations.

Another point of some little importance is that one can always manage better if he stands behind the patient, who should sit in a chair facing the window. The patient's head can be steadied in this way, and the operator has a convenient rest for his wrist, which is of immense advantage in delicate manipulations about the eye. With the use of cocaine, and having the patient in this position, it is very rarely necessary to use a speculum. The lids can be held apart by two fingers, and it is of great advantage to use another finger to press upon the conjunctiva and sclerotic, so as to steady the eye. This pressure upon the eyeball distracts the patient's attention from the impact of the instrument upon the cornea, and the eye is less likely to make disturbing movements. In regard to instruments for removing foreign bodies: The one I use oftenest is a very simple contrivance, and in a large majority of instances is all that is necessary. It is simply a wooden toothpick with a very small pledget of cotton wrapped around its end. Formerly a blunt spud took the place of the cotton in many instances where the foreign body was on the surface. When the cotton does not accomplish the purpose, one of the most useful instruments is an old-fashioned couching needle. Another instrument which is often extremely useful is a delicate, sharp gouge. A considerable amount of inflammatory reaction may be present if the foreign body has been in the eye for some time. In this case a solution of one or two grains of atropia and 10 grains of boracic acid to the ounce of water is valuable, and should be instilled several times a day. As this causes the inconvenience of blurred vision, the atropia should not be prescribed unless there is a decided indication. For a soothing lotion not attended by this inconvenience, there is nothing so good as one of opium, applied upon a pad of linen or gauze over the closed eyelids; the solution should be of the strength of 10 to 15 grains of the aqueous extract dissolved in 4 ounces of water.

Exhibition of a Convalescent Case of Peritonitis due to Ruptured Tubal Abscess.—DR. KELLY.

This colored woman was admitted to the hospital, September 30, with a history of severe chills and frequent rigors. On admission her temperature was 100° F., pulse rapid and weak, abdomen tympanitic. There were nausea and vomiting, and she was suffering excruciating pain.

The symptoms of peritonitis were quite evident, and a vaginal examination revealed a hard mass choking the entire pelvis.

She was subjected to abdominal section the day after admission, which revealed a general purulent peritonitis, originating from a ruptured tubal abscess. Although similar cases are frequently reported in medical literature, they are by no means as common as one would think from the discussion in medical societies and the number of articles written on the subject.

The left tube had ruptured on its dorsum, discharging thick, creamy pus into the peritoneal cavity. The intestines were greatly distended, and in places the loops were bound together with plastic lymph of recent origin.

Pus covered the free surface of the intestines, and I ladled out a large quantity with my hand from the iliac fossæ.

Although there was double pyosalpinx, I did not consider it advisable to remove both, and only extirpated the ruptured tube, as the condition of the patient was so bad as to preclude further operative measures.

I show this case because of the extensive drainage which I employed. The intestines were so thoroughly interpenetrated with pus, and such a large quantity was constantly forming, I felt that only the most thorough drainage could avail in saving her life. I made an incision on either side of the abdomen in the flanks between the iliac crests and the lower ribs, and then introduced three large strips of gauze, one from each lateral incision extending upward into the pelvis, and one from the median incision down into the pelvis, thus securing triple drainage.

A point of interest which I wish to note is that in draining through the flanks the long channel is much more likely to become occluded, in spite of the gauze, than in draining through a central

incision. To overcome this I tack the peritoneum to the skin, and leave it for a few days, and then cut the stitches and drop the peritoneum back, and the incision promptly unites.

For two days after operation this patient was delirious, and while in this condition got out of bed, without, however, apparent injury. The high fever quickly subsided, and the rapid pulse became normal in a few days, and she made a perfect recovery.

This case, in its method of treatment, is similar to one admitted to the hospital in 1891. In that case there was a large abscess filling the pelvis and extending up above the umbilicus and laterally into both flanks; the pus, however, was walled off from the peritoneal cavity by extensive adhesions. It was treated in the same manner as the case before you, and the recovery was perfectly satisfactory.

NOTES ON NEW BOOKS.

A Text-book of Ophthalmology. By WILLIAM F. NORRIS, A. M., M. D., *Professor of Ophthalmology in the University of Pennsylvania and one of the Surgeons to the Wills Eye Hospital, Philadelphia*, and CHARLES A. OLIVER, A. M., M. D., *one of the Surgeons to the Wills Eye Hospital, Philadelphia, and one of the Ophthalmic Surgeons to the Presbyterian Hospital, Philadelphia*. 8vo., pp. 641, with 5 colored plates and 357 engravings. (*Philadelphia: Lea Brothers & Co.*, 1893.)

Within the past few months the ophthalmic literature of the English language has been enriched by three notable additions—the translation by Dr. A. Duane of Ernest Fuchs' Text-book of Ophthalmology, Dr. G. E. de Schweinitz' Diseases of the Eye, and the text-book of Norris and Oliver. For both of the two last-named volumes we are indebted to Philadelphians.

The appearance of Norris and Oliver's text-book has been looked forward to with great interest by all those who, through their familiarity with the scientific and literary work of its authors, were best qualified to judge of their especial fitness for the task they had undertaken, and it is high praise to be able to say that the completed work does not in any respect fall short of the standard which it was expected to reach. As the authors tell us in their brief preface, "the work is not only representative of extensive research into the rich literature upon the subject, but is expressive of the result of careful clinical experience that has extended over many years of active practice."

The volume is divided into two parts. Part I, comprising the first ten chapters, is contributed by the junior author, Dr. Oliver. It treats of the embryology, anatomy and physiology of the eye, of optics, physiological optics, the various methods of examining the eye, including ophthalmoscopy and retinoscopy (or, as he prefers to call it, "the fundus-reflex test"), and the methods of determining and correcting errors of refraction and accommodation. Part II, contributed by Dr. Norris, might properly be termed the clinical portion of the volume. It comprises Chapters XI to XXIX, inclusive, and treats of injuries of the orbits, eyes and eyelids, the various diseases of the eye and its appendages, errors of refraction and accommodation, and affections of the eye-muscles, with a final chapter upon "some of the more common and important operations on the eye."

In Chapters I, II and III Dr. Oliver has given us an excellent account of the embryology and of the anatomy and physiology of the organ of vision. These chapters also contain some admirable illustrations. Especially worthy of note are the one (after Merkel) on p. 29, showing the position of the eyeball in the orbit, and the reproduction of Jaeger's section of the optic-nerve head on p. 74. The value of some of these illustrations, however, is detracted from because no key is given in the text or elsewhere to the numbers and letters which appear in connection with the illustrations, as, for example, Figs. 31 and 32 on p. 71. The description given of the "fundus-reflex test" and the chapter upon ophthalmoscopy are both excellent, and we are much pleased to find the examination of the eye by oblique illumination described as fully as it is, and its value emphasized as we think it should be. The condition to which Dr. Edward Jackson has given the name of symmetrical aberration of the eye we think might have received more consideration, in one or the other of these chapters, than the passing reference to it on page 226.

As was to be expected, the chapters by Dr. Oliver upon the determination and correction of errors of refraction and accommodation are especially full and clear. We are inclined, however, to take exception to the description (p. 237) of emmetropia as a condition "which is very rare, and generally appears as an evanescent state between hypermetropia and myopia in a stretching globe." While willing to admit that hypermetropia is, probably, a much more common condition than emmetropia, we are not quite prepared to accept the view that emmetropia rarely exists except as a pathological condition. We also must dissent from the opinion expressed on p. 168 that "by far the most common [muscular] error, especially in cases of ametropia, is a condition known as *exophoria*." Esophoria, our experience convinces us, occurs as a condition requiring attention as often as, if not indeed more often than, exophoria.[1]

The senior author, it would appear, shares with Dr Oliver this view as to the comparative unimportance of esophoria; for, although he devotes a long paragraph to the consideration of "insufficiency of the interni," he has nothing to say of esophoria except to define the meaning of the word. Moreover, in describing the "operative treatment of insufficiency and heterophoria" (p. 550), what he says has reference solely to tenotomy of the external rectus for exophoria, and of the superior and inferior muscles for hyperphoria, no mention whatever being made of division of the internus for esophoria.

Dr. Norris' large experience enables him to speak "as one having authority" upon the subject of cataract and the operations for its removal, and we have found especially instructive the chapter which he devotes to this subject. In reference to the, at present, much debated question of extraction *with or without iridectomy* he says (p. 432): "In the opinion of the author, the flap operation, combined with iridectomy, is usually safer, and will give an average of better results in a large number of consecutive cases, not selected especially for the form of operation, but taken as they ordinarily present themselves." He adds, however, that "when there is a fully ripe, hard, waxy and uncomplicated senile cataract, with a healthy iris and a pupil that dilates *ad maximum*, excellent results are often obtained" by the simple method of extraction, without iridectomy. When he purposes making an iridectomy, he prefers to complete the section of the cornea so that a small conjunctival flap shall be left at the upper part of the wound; for, though this increases the risk of hemorrhage and makes the iridectomy somewhat more difficult, it greatly facilitates, he thinks, the rapid healing of the external wound. He prefers to have the upper lid held up by an elevator rather than use a speculum, and does not approve of washing out the anterior chamber with antiseptic solutions after the removal of the lens. He operates upon the patient in the bed where he is to remain, and considers "it is very important that the patient should remain quiet for the first twenty-four hours" after the operation. He believes in antiseptic precautions, but the measures which he describes are not as thorough as many operators think necessary. The light of the room in which the patient is to remain after the operation "should be so tempered and arranged that no direct rays shall fall on his face. At the same time there should be sufficient light to enable the

[1] To assure himself that his convictions upon this point were well founded, the reviewer has glanced over the notes of his recent cases in which tenotomy was required for lateral heterophoria, and he finds that of 26 consecutive tenotomies of the lateral muscles, in 19 individuals, 19, in 13 individuals, were performed for esophoria and only 7, in 6 individuals, for exophoria. Tenotomies for actual squints were not taken into account.

attendants to move around comfortably and to read to the patient if desirable."

The chapters upon diseases of the retina and optic nerve are instructive and interesting, and are made all the more so because of the excellent and numerous illustrations which they contain.

We are pleased to find that so high an authority as Dr. Norris believes that the amblyopia of squinting eyes is a consequence of the squint and not a cause. "It has always appeared to the author," he says (p. 554), "that voluntary and long-practised mental suppression of the images is the real cause of the amblyopia." Dr. Norris has not found the ophthalmometer a very trustworthy instrument, and his estimate of its value (p. 414) does not accord with that of the junior author.

In speaking of the treatment of chalazion (p. 562), he recommends that, unless the growth has reached an advanced stage, it should be "dissected out" through an incision made in the external surface of the lid. We have invariably operated upon all cases of chalazion from the conjunctival surface of the lid and have never attempted to dissect out the sac, but have destroyed it by curetting and by the application of nitrate of silver fused upon the tip of a silver probe. As thus performed the operation is a simple procedure, which takes but little time, is attended by an inconsiderable amount of pain, and is almost invariably effectual, and we cannot but think it a much better method of dealing with these cases than the far more difficult, tedious and painful operation preferred by Dr. Norris.

In the chapter upon diseases of the "lacrymal apparatus" Dr. Norris says that he does not share the views of those who have advocated the use of large probes in the treatment of strictures of the nasal duct. Larger probes than No. 6 of the Bowman series, he thinks, should be avoided, and "in most cases a No. 4 probe is sufficient." His experience is certainly very exceptional if he has been able in this manner to cure, or permanently benefit, even a small percentage of cases of stenosis of the duct, and, in view of the evidence, both anatomical and clinical, which has been brought forward in favor of thoroughly dilating the strictures by means of probes of sufficient size to restore the normal calibre of the duct, one cannot help feeling some surprise at finding such views advanced in a work upon diseases of the eye which, in most respects, is so thoroughly "up to date."

The proof-reading of the volume seems to have been carefully done and typographical errors are of infrequent occurrence. Careful revision should have eliminated, however, some errors which we have noted, such as the repeated use of the adjective "cortical" as a substantive (p. 434), and this statement on p. 383: "The shorter the radius of curvature of the cornea or of the lens, and hence the higher the indices of refraction (*sic*), the closer the retina would have to be to the combined lens-system to make an emmetropic eye." As is their rule, the publishers have done their share of the work in a manner which is thoroughly satisfactory.

In conclusion, we take pleasure in commending the "Text-book" to students and practitioners as a safe and admirable guide, well qualified to furnish them, as the authors intended it should, with "a working knowledge of ophthalmology." S. T.

The Diseases of Children, Medical and Surgical. By HENRY ASHBY, M. D. Lond., F. R. C. P., *Physician to the General Hospital for Sick Children, Manchester, Lecturer and Examiner in Diseases of Children in the Victoria University, etc.*, and G. A. WRIGHT, B. A., M. B. Oxon., F. R. C. S. Eng., *Assistant Surgeon to the Manchester Royal Infirmary and Surgeon to the Children's Hospital, etc.* Second edition, edited for American students by WILLIAM PERRY NORTHRUP, A. M., M. D., *Attending Physician to the Presbyterian Hospital, Pathologist to the N. Y. Foundling Hospital, etc.* (*Longmans, Green & Co.* 1893.)

This book is written conjointly by a physician and a surgeon, and is based upon the experience of the authors at the General Hospital for Sick Children, Manchester, an institution at which some 1200 in-patients and some 10,000 out-patients are annually treated. Their observations extended over nearly ten years, during which time they were collecting material for this purpose. It is intended for senior students and junior physicians, and treats of the various morbid conditions peculiar to or chiefly found in infancy and childhood. The practical nature of the book and the concise manner in which it is written render it equally valuable to the busy practitioner.

It is a book of 757 pages, and has 183 illustrations, taken almost entirely from photographs of cases that have been under the care of the authors. The print is rather small, but this is compensated for in the more convenient size. The arrangement is good. It is divided into 38 chapters, each embracing a number of subjects, the headings for which are readily distinguished by dark letters. A great many subjects are considered, some not usually found in text-books on diseases of children. Thus the first chapter is devoted to the physiology of infancy and childhood, and the last chapter to anæsthetics for children, both valuable additions.

The book is well adapted to the purpose for which it is intended. It is abreast of the times and written in an agreeable and easy style, and what is said on a subject is to the point and without unnecessary verbiage. Where so many subjects are written upon in the space convenient for a text-book, some must necessarily be considered very briefly. As a rule, judicious discrimination is made in the allotment of space according to the importance of the subject and what is known upon it. A noticeable exception is made to so important a subject as rheumatism, which is allowed only two and a half pages. Diseases of the digestive system, respiratory apparatus, circulatory apparatus, nervous system, the specific fevers, diseases of the genito-urinary system, and diseases of bones and joints, receive appropriate attention and are treated in an interesting and instructive manner.

The treatment recommended for the different diseases is conservative and good, and, based as it is upon the extensive experience of the authors, will prove helpful to the practitioner in many cases.

The American editor has added in an appendix the recent advances made by American physicians in the treatment of diseases in children, among which may be mentioned the method for giving calomel fumigations in laryngeal diphtheria, which is so highly esteemed by the physicians of Brooklyn and New York. He has also rewritten the formulæ to conform to t U. S. Pharmacopœia.

W. D. B.

Zur Lehre vom Luftwechsel. DR. GUSTAV WOLFFHÜGEL. Reprint from *Archiv f. Hygiene*, Bd. xviii, 1893. Dedicated to Max von Pettenkoffer on the celebration of the anniversary of his graduation.

Wolffhügel calls attention to the fact that there has been no publication which has led to improvement in matters of ventilation since Pettenkoffer's classical work entitled, "On the Ventilation of Dwellings" (Munich, 1858). No investigation has materially affected either the results or the methods which Pettenkoffer gives in this work. The object of ventilation is still restricted in the first place to the removal of the gaseous impurities, and has no effect upon disease-producing organisms; and in the second place to the introduction of pure air. All results of modern surgery prove that micro-organisms, or other injurious substances other than foul air, must be got rid of, as Pettenkoffer maintained, by cleanliness. Ventilation should only be required to remove the exhalations from the lungs and skin, but not foul gases arising from putrefaction. Pores in the building materials must be closed, and the fresh air admitted as well as foul air carried off by special flues. Fresh air should be warmed in winter. Reverse currents should be avoided. All arrangements should be as simple as possible. Pettenkoffer's method of determining the extent of pollution of the air, and necessary amount of ventilation, by estimating the carbon dioxide is the best yet devised.

This work in brief deserves a high place among classical medical literature. M. B.

READY JANUARY 1, 1894.

HOSPITALS, DISPENSARIES, AND NURSING,

INCLUDING PAPERS ON

Hospital Care of the Sick.—Training Schools for Nurses.—Dispensaries.—First Aid to the Injured.

[*Transactions of Section III, International Congress of Charities, Correction and Philanthropy, held in Chicago, June 12th to 18th, 1893.*]

In one volume of upwards of 700 pages with about 60 illustrations.

CONTENTS.

The Principles of Nurse Training. Miss Florence Nightingale, London.
Nursing Work of the Religious Orders of the Roman Catholic Church. Cardinal Gibbons, Baltimore.
The Medical Charities of the English Metropolis. Lord Cathcart, London.
Hospitals in Relation to Public Health. Dr. J. S. Billings, U. S. A., Washington.
Military Hospitals. Dr. C. Grossheim, Surgeon-General, German Army, Berlin.
Hospital Finances. Henry C. Burdett, London.
Applicability of Hygiene to Modern Warfare. Lt.-Col. J. L. Notter, British Army, Netley, Eng.
Standards of Education for Nurses. Miss Isabel A. Hampton, Baltimore.
The Trustee of the Hospital. Richard Wood, Philadelphia.
Relation of Training Schools to Hospitals. Miss L. L. Dock, Chicago.
Relation of Medical Staff to Governing Bodies in Hospitals. Dr. Edward Cowles, Boston.
Hospital Administration. Dr. H. Mercke, Berlin.
Relation of Hospitals to Medical Education. Dr. Henry M. Hurd, Baltimore.
Hospital Accounts and Methods of Book keeping. James R. Lathrop, New York.
Paying Patients in Hospitals. Dr. H. M. Lyman, Chicago.
Paris Free and Paying Hospitals. Drs. Alan Herbert and W. Douglas-Hogg, Paris.
Dispensaries (1 illustration). C. C. Savage, New York.
Utility, Peculiarities and Special Needs of Hospitals for Children. Dr. W. W. Ord, London.
Naval Hospitals (20 illustrations). Dr. J. D. Gatewood, U. S. N.
The Marine Hospital Service. Dr. G. W. Stoner, U. S. Marine Hospital Service.
Detention Hospitals for Insane and Alcoholic Cases. Dr. M. D. Field, New York.
Cottage Hospitals. Francis Vacher, Birkenhead, Eng.
Obstetric Hospitals (1 illustration). Dr. B. C. Hirst, Philadelphia.
Hospitals for Infectious Diseases. Dr. C. F. M. Pistor, Berlin.
Isolating Wards and Infectious Hospitals. Dr. G. H. M. Rowe, Boston.
Hospital for Contagious and Infectious Diseases (4 illustrations). Dr. M. L. Davis, Lancaster, Pa.
Isolation Wards and Hospitals for Contagious Diseases in Paris. Drs. A. Herbert and W. Douglas-Hogg, Paris.
Training Schools for Nurses in Paris. Dr. Leon La Forte, Paris.
Hospitals and Nursing in Amsterdam. Dr. Edward Stumpff, Amsterdam.
Nurses' Homes. Miss K. L. Lett, Chicago.
Diet Kitchens in Hospitals. Dr. B. H. Stehman, Chicago.
Hospital Dietaries. Miss M. A. Boland, Baltimore.
Laundry of the University of Pennsylvania Hospital (1 illustration). Dr. A. C. Abbott, Philadelphia.
First Help in Hemorrhage. Prof. von Esmarch, Kiel, Germany.
First Aid to the Injured and How it should be Taught. Dr. H. G. Beyer, U. S. N.
First Aid to the Injured from the Army Standpoint. Dr. Chas. Smart, U. S. A.
Organization of First Aid to the Wounded in Paris. Drs. A. Herbert and W. Douglas-Hogg, Paris.
The Ambulance System of New York. George P. Ludlam, New York.
An Easy Method of Bedmaking and Improved Stretcher for Hospital and Military Use (1 illustration). Dr. E. D. Worthington, Sherbrooke, P. Q.
Present Charity Organization in Chili. Dr. Luis Asta-Buruaga, Valparaiso.
Hospital Saturday and Sunday. Frederick F. Cook, New York.
Training Schools in Great Britain. Miss A. C. Gibson, Scotland.
Trained Nursing in Berlin. Fraulein Louise Fahrmann, Germany.
La Source Normal Evangelical School of Independent Nurses for the Sick at Lausanne, Switzerland. Dr. Chas. Krafft.
The Education of Nurses in the Catholic Religious Orders of Germany. Sanitätsrath Dr. Kollen.
The Work of Deaconesses in Germany.
Training Schools in America. Miss Irene Sutliffe, New York.
Proper Organization of Training Schools in America. Miss Louise Darche, New York.
Nurses as Heads of Hospitals. Miss E. P. Davis, Philadelphia.
Needs for an American Nurses' Association. Miss Edith Draper, Chicago.
The Royal National Pension Fund for Nurses. Miss Gordon, London.
District Nursing in England. Mrs. Dacre Craven, London.
The Origin and Present Work of Queen Victoria's Jubilee Institute for Nurses. Miss A. Hughes, London.
District Nursing in America. Miss C. E. Somerville, Lawrence, Mass.
Missionary Nursing in Japan and China. Miss L. Richards, Roxbury, Mass.
Children's Hospitals. Miss Rogers, Washington.
The Nursing of the Insane. Miss May, Rochester, N. Y.
Workhouse Nurses' Association. Miss Louise Twining, Liverpool.
The Instruction of the Sisters of the Red Cross. Dr. Goering, Bremen.
Benefits of Alumnae Associations. Miss I. McIsaac, Chicago.
Obstetric Nursing. Miss G. Pope, Washington.
Midwifery as a Profession for Women. Mrs. Z. P. Smith, London.
Nursing in Homes, Private Hospitals and Sanitariums. Mrs. S. M. Baker, Battle Creek, Mich.
London Hospital Nurses' Home. Miss Eva C. E. Lückes, London.
Association for the Training of Attendants. Mrs. D. H. Kinney, Boston.
Red Cross and First Aid Societies. John Furley, London.
On the Organization in Paris of First Aid to the Wounded. Drs. Alan Herbert and W. Douglas-Hogg, Paris.
Description of the Montreal General Hospital (3 illustrations). Dr. W. F. Hamilton, Montreal.
Description of Royal Victoria Hospital (2 illustrations). Jno. J. Robson, Montreal.
Description of the Roosevelt Hospital (11 illustrations). James R. Lathrop, New York.
Description of the Johns Hopkins Hospital (19 illustrations). Dr. H. M. Hurd, Baltimore.

The edition is limited and the pages are not stereotyped.

Price, bound in cloth, delivered, **$5.00 per copy.**

Orders and subscriptions should be addressed at once to THE JOHNS HOPKINS PRESS, BALTIMORE, MD.

The Johns Hopkins Hospital Bulletins are issued monthly. They are printed by THE FRIEDENWALD CO., Baltimore, from whom single copies may be obtained; they may also be procured from Messrs. CUSHING & CO. and the BALTIMORE NEWS COMPANY. Subscriptions, $1.00 a year, may be addressed to THE JOHNS HOPKINS PRESS, BALTIMORE; single copies will be sent by mail for fifteen cents each.